

Appl. No. 09/830,976
Amdt. dated November 4, 2004
Reply to Office Action of July 2, 2004

PATENT

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (Previously presented) A method of reducing cross-contamination of an assay reagent solution, the method comprising:

- contacting a solid support with a first reagent solution;
- removing the solid support from contact with the first reagent solution; and
- contacting the solid support with a second reagent solution;

wherein cross-contamination of the second reagent solution by the first reagent solution is reduced by coating the solid support with a non-stick material prior to contacting the solid support with the first reagent solution.

2. (Previously presented) The method of claim 1, wherein the solid support is contacted with one or more intermediate solutions prior to contacting the solid support with the second reagent solution.

3. (Original) The method of claim 2, wherein the intermediate solution comprises a wash solution.

4. (Original) The method of claim 1, wherein the solid support is removed from a first container that contains the first reagent solution and placed in a second container that contains the second reagent solution.

5. (Original) The method of claim 4, wherein the first container and the second container are wells of a microtiter plate.

6. (Original) The method of claim 4, wherein the solid support is selected from the group consisting of a prong, a dipstick, a glass bead, and a magnetic particle.

Appl. No. 09/830,976
Amdt. dated November 4, 2004
Reply to Office Action of July 2, 2004

PATENT

7. (Original) The method of claim 1, wherein the solid support comprises a container and the first reagent solution is removed from the container and the second reagent solution is placed into the container.

8. (Original) The method of claim 7, wherein one or more intermediate solutions is placed into the container after removing the first reagent solution and prior to placing the second reagent into the container.

9. (Original) The method of claim 7, wherein the solid support is selected from the group consisting of: a microtiter plate, a tube, a silicon chip, and a slide.

10. (Original) The method of claim 1, wherein the solid support comprises a capture reagent which specifically binds to a target analyte.

11. (Original) The method of claim 1, wherein the first reagent solution comprises a denaturant.

12. (Original) The method of claim 11, wherein the denaturant is selected from the group consisting of a chaotropic agent and a detergent.

13. (Previously presented) The method of claim 1, wherein the non-stick coating material is selected from the group consisting of silane, dimethylchlorosilane and dimethyl polysiloxane.

14. (Original) The method of claim 1, wherein the second reagent solution comprises a substrate which produces a detectable product when contacted with an enzyme linked to a signal reagent.

15. (Original) A method of detecting a target analyte in a test sample, the method comprising:

contacting a test sample with a solid support which comprises a capture reagent that binds to the target analyte, wherein the solid support is coated with a non-stick coating

Appl. No. 09/830,976
Amdt. dated November 4, 2004
Reply to Office Action of July 2, 2004

PATENT

material prior to contacting the sample;

contacting the solid support with a signal reagent which binds to the target analyte; and

determining whether the test sample contains the target analyte by detecting the presence of signal reagent immobilized on the solid support.

16. (Original) The method of claim 15, wherein the non-stick coating material is a silanizing agent.

17. (Previously presented) The method of claim 15, wherein the non-stick coating material is selected from the group consisting of silane, dimethylchlorosilane and dimethyl polysiloxane.

18. (Original) The method of claim 15, wherein the test sample comprises a denaturant.

19. (Original) The method of claim 18, wherein the denaturant is selected from the group consisting of a chaotropic agent and a detergent.

20. (Original) The method of claim 15, wherein the solid support is coated with the non-stick coating material after the capture reagent is attached to the solid support.

21. (Original) The method of claim 15, wherein the capture reagent is attached to the solid support prior to contacting the test sample with the solid support.

22. (Original) The method of claim 15, wherein the capture reagent is attached to the solid support simultaneously with contacting the test sample with the solid support.

23. (Original) The method of claim 15, wherein the method further comprises washing the solid support prior to contacting the solid support with the signal reagent.

Appl. No. 09/830,976
Amdt. dated November 4, 2004
Reply to Office Action of July 2, 2004

PATENT

24. (Original) The method of claim 15, wherein the method further comprises washing the solid support prior to detecting the presence of signal reagent.
25. (Original) The method of claim 15, wherein the solid support is selected from the group consisting of a dipstick, a bead, a magnetic particle, a centrifuge tube, and a glass slide.
26. (Original) The method of claim 15, wherein the capture reagent is covalently attached to the solid support.
27. (Original) The method of claim 15, wherein the capture reagent is noncovalently attached to the solid support.
28. (Original) The method of claim 27, wherein the capture reagent comprises a tag which binds to a tag binder attached to the solid support.
29. (Original) The method of claim 28, wherein the tag is biotin and the tag binder is selected from the group consisting of avidin, streptavidin, and an antibody that binds to biotin.
30. (Original) The method of claim 28, wherein the capture reagent comprises an antibody and the tag binder is selected from protein A, protein G, and an antibody that binds to the capture reagent.
31. (Original) The method of claim 15, wherein the target analyte comprises a polynucleotide and the capture reagent comprises an oligonucleotide which hybridizes to the polynucleotide.
32. (Original) The method of claim 31, wherein the polynucleotide is DNA or RNA.
33. (Original) The method of claim 31, wherein the signal reagent comprises a detectable label attached to an oligonucleotide which hybridizes to the polynucleotide.

Appl. No. 09/830,976
Amdt. dated November 4, 2004
Reply to Office Action of July 2, 2004

PATENT

34. (Original) The method of claim 31, wherein the signal reagent comprises a detectable label attached to an antibody which specifically binds to double stranded nucleic acids.

35. (Original) The method of claim 31, wherein the polynucleotide is amplified prior to contacting the sample with the capture reagent.

36. (Previously presented) The method of claim 35, wherein the polynucleotide is amplified by a procedure selected from the group consisting of polymerase chain reaction, ligase chain reaction, strand displacement amplification, transcription mediated amplification, and nucleic acid sequence-based amplification ("NASBA").

37. (Previously presented) The method of claim 31, wherein the denaturant is selected from the group consisting of guanidine, sodium thiocyanate, urea, and lithium tetrachloroacetate.

38. (Original) The method of claim 15, wherein the capture reagent comprises an antibody which binds to the target analyte.

39. (Original) The method of claim 15, wherein the signal reagent comprises an antibody which binds to the target analyte.

40. (Original) The method of claim 15, wherein the signal reagent comprises a detectable label.

41-47. Canceled

48. (Previously presented) A method of claim 1, wherein the non-stick material is selected from the group consisting of a silane and a siloxane.

49. (Previously presented) A method of claim 15, wherein the non-stick material is selected from the group consisting of a silane and a siloxane.

Appl. No. 09/830,976
Amdt. dated November 4, 2004
Reply to Office Action of July 2, 2004

PATENT

50. (Previously presented) A method of reducing cross-contamination of an assay reagent solution, the method comprising:

- contacting a solid support with a first reagent solution;
- removing the solid support from contact with the first reagent solution; and
- contacting the solid support with a second reagent solution;

wherein cross-contamination of the second reagent solution by the first reagent solution is reduced by coating the solid support with a non-stick material subsequent to contacting the solid support with the first reagent solution.

51. (Previously presented) The method of claim 50, wherein the solid support is contacted with one or more intermediate solutions prior to contacting the solid support with the second reagent solution.

52. (Previously presented) The method of claim 51, wherein the intermediate solution comprises a wash solution.

53. (Previously presented) The method of claim 50, wherein the solid support is removed from a first container that contains the first reagent solution and placed in a second container that contains the second reagent solution.

54. (Previously presented) The method of claim 53, wherein the first container and the second container are wells of a microtiter plate.

55. (Previously presented) The method of claim 50, wherein the solid support is selected from the group consisting of a prong, a dipstick, a glass bead, and a magnetic particle.

56. (Previously presented) The method of claim 50, wherein the solid support comprises a container and the first reagent solution is removed from the container and the second reagent solution is placed into the container.

Appl. No. 09/830,976
Amdt. dated November 4, 2004
Reply to Office Action of July 2, 2004

PATENT

57. (Previously presented) The method of claim 56, wherein one or more intermediate solutions is placed into the container after removing the first reagent solution and prior to placing the second reagent into the container.

58. (Previously presented) The method of claim 56, wherein the solid support is selected from the group consisting of: a microtiter plate, a tube, a silicon chip, and a slide.

59. (Previously presented) The method of claim 50, wherein the solid support comprises a capture reagent which specifically binds to a target analyte.

60. (Previously presented) The method of claim 50, wherein the first reagent solution comprises a denaturant.

61. (Previously presented) The method of claim 60, wherein the denaturant is selected from the group consisting of a chaotropic agent and a detergent.

62. (Previously presented) The method of claim 50, wherein the non-stick coating material is selected from the group consisting of silane, dimethylchlorosilane and dimethylsiloxane.

63. (Previously presented) The method of claim 62, wherein the second reagent solution comprises a substrate which produces a detectable product when contacted with an enzyme linked to a signal reagent.

64. (Previously presented) A method of detecting a target analyte in a test sample, the method comprising:

contacting a test sample with a solid support which comprises a capture reagent that binds to the target analyte, wherein the solid support is coated with a non-stick coating material subsequent to contacting the sample;

contacting the solid support with a signal reagent which binds to the target analyte; and

Appl. No. 09/830,976
Amdt. dated November 4, 2004
Reply to Office Action of July 2, 2004

PATENT

determining whether the test sample contains the target analyte by detecting the presence of signal reagent immobilized on the solid support.

65. (Previously presented) The method of claim 64, wherein the non-stick coating material is a silanizing agent.

66. (Previously presented) The method of claim 64, wherein the non-stick coating material is selected from the group consisting of a silane and a siloxane.

67. (Previously presented) The method of claim 64, wherein the non-stick coating material is selected from the group consisting of silane, dimethylchlorosilane and dimethylsiloxane.

68. (Previously presented) The method of claim 64, wherein the test sample comprises a denaturant.

69. (Previously presented) The method of claim 68, wherein the denaturant is selected from the group consisting of a chaotropic agent and a detergent.

70. (Previously presented) The method of claim 64, wherein the solid support is coated with the non-stick coating material after the capture reagent is attached to the solid support.

71. (Previously presented) The method of claim 64, wherein the capture reagent is attached to the solid support prior to contacting the test sample with the solid support.

72. (Previously presented) The method of claim 64, wherein the capture reagent is attached to the solid support simultaneously with contacting the test sample with the solid support.

73. (Previously presented) The method of claim 64, wherein the method further comprises washing the solid support prior to contacting the solid support with the signal reagent.

Appl. No. 09/830,976
Amdt. dated November 4, 2004
Reply to Office Action of July 2, 2004

PATENT

74. (Previously presented) The method of claim 64, wherein the method further comprises washing the solid support prior to detecting the presence of signal reagent.

75. (Previously presented) The method of claim 64, wherein the solid support is selected from the group consisting of a dipstick, a bead, a magnetic particle, a centrifuge tube, and a glass slide.

76. (Previously presented) The method of claim 64, wherein the capture reagent is covalently attached to the solid support.

77. (Previously presented) The method of claim 64, wherein the capture reagent is noncovalently attached to the solid support.

78. (Previously presented) The method of claim 77, wherein the capture reagent comprises a tag which binds to a tag binder attached to the solid support.

79. (Previously presented) The method of claim 78, wherein the tag is biotin and the tag binder is selected from the group consisting of avidin, streptavidin, and an antibody that binds to biotin.

80. (Previously presented) The method of claim 78, wherein the capture reagent comprises an antibody and the tag binder is selected from protein A, protein G, and an antibody that binds to the capture reagent.

81. (Previously presented) The method of claim 64, wherein the target analyte comprises a polynucleotide and the capture reagent comprises an oligonucleotide which hybridizes to the polynucleotide.

82. (Previously presented) The method of claim 81, wherein the polynucleotide is DNA or RNA.

Appl. No. 09/830,976
Amdt. dated November 4, 2004
Reply to Office Action of July 2, 2004

PATENT

83. (Previously presented) The method of claim 81, wherein the signal reagent comprises a detectable label attached to an oligonucleotide which hybridizes to the polynucleotide.

84. (Previously presented) The method of claim 81, wherein the signal reagent comprises a detectable label attached to an antibody which specifically binds to double stranded nucleic acids.

85. (Previously presented) The method of claim 81, wherein the polynucleotide is amplified prior to contacting the sample with the capture reagent.

86. (Previously presented) The method of claim 85, wherein the polynucleotide is amplified by a procedure selected from the group consisting of polymerase chain reaction, ligase chain reaction, strand displacement amplification, transcription mediated amplification, and nucleic acid sequence-based amplification.

87. (Previously presented) The method of claim 81, wherein the denaturant is selected from the group consisting of guanidine, sodium thiocyanate, urea, and lithium TCA.

88. (Previously presented) The method of claim 85, wherein the capture reagent comprises an antibody which binds to the target analyte.

89. (Previously presented) The method of claim 85, wherein the signal reagent comprises an antibody which binds to the target analyte.

90. (Previously presented) The method of claim 85, wherein the signal reagent comprises a detectable label.

91. Cancelled.